National Institute on Drug Abuse

# Improving Opioid Prescribing

## *SCIENCE* DRIVEN SOLUTIONS

### PAIN EDUCATION IS OFTEN INSUFFICIENT

Most U.S. medical students only received about 9 hours of pain-related training.[1] In addition, most providers are not trained to identify or treat opioid addiction.[2] The NIH is working to help address this gap through:

### EVIDENCE-BASED RESOURCES FOR PHYSICIANS

The National Institute on Drug Abuse (NIDA) has developed tools, as part of its NIDAMED initiative, to educate health care professionals about how to identify and treat patients with opioid use disorders. The materials include continuing medical education (CME), screening and assessment tools, and opioid prescribing resources.

### IMPROVING PAIN EDUCATION

The NIH Pain Consortium developed the Centers of Excellence in Pain Education program (CoEPEs) to improve how health care professionals are taught about pain and its treatment. The CoEPEs act as hubs for the development, evaluation, and distribution of pain management curriculum resources for medical, dental, nursing, and pharmacy schools.

## OPIOID PRESCRIBERS CAN PLAY A KEY ROLE IN STOPPING THE OPIOID OVERDOSE EPIDEMIC

**Prescription opioid medications can help treat and manage severe pain but may pose risks for addiction, overdose, and death.**

- The risk of addiction, overdose, and death are increased when patients are prescribed higher doses of prescription opioids.[3-5]
- In a recent study, nearly 60% of patients using prescription opioids were also taking other prescription drugs that put them at higher risk of overdose; more than 29% were prescribed benzodiazepines, 28% were prescribed muscle relaxants, and 8% were prescribed all three medications concurrently.[6]
- Misuse of prescription opioids is a risk factor for heroin use—80% of people initiating heroin use report prior misuse of prescription opioids.[7]

**Chronic pain affects 100 million Americans, but opioids may not be appropriate for many pain patients.**

- In 2014, Americans filled 245 million prescriptions for opioid pain relievers, making them the most frequently prescribed medication in the U.S.[8]
- Among new pain patients who take prescription opioids for more than 30 days in the first year, 47% continued to do so for 3 years or longer.[7]
- Patients with central pain syndromes (e.g., fibromyalgia, tension headaches) respond better to antidepressant and anticonvulsant medications than to opioids.[9]
- Chronic opioid use can lead to increased pain sensitivity, exacerbating pain conditions.[10]

**Prescribers should re-evaluate opioid prescriptions after nonfatal overdoses.[11]**

- One recent study found opioids were prescribed to 91% of patients following a nonfatal overdose.
- Of these patients, 63% remained on a high dose of prescription opioids after overdosing, and 17% of these patients overdosed again within 2 years.

**Implementation of opioid prescribing guidelines can save lives**

- Clinical practice guidelines promote safer, more effective chronic pain treatment while reducing the number of people who misuse opioids, develop an opioid use disorder, or overdose from these powerful drugs.
- After Washington State introduced voluntary opioid guidelines in 2007, prescription opioid-related overdose deaths among injured workers dropped by half.[12]
- In 2016, the Centers for Disease Control and Prevention (CDC) released a national Guideline for Prescribing Opioids for Chronic Pain: http://www.cdc.gov/drugoverdose/prescribing/guideline.html

# GUIDELINE FOR OPIOID PRESCRIBING FOR PAIN[13]

The CDC led the effort to develop guidelines for opioid prescribing for treating adult patients with chronic pain in primary care settings.

### Long-term Opioid Use Often Begins with Treatment of Acute Pain

- Providers should prescribe the lowest effective dose possible.
- Providers should prescribe no greater quantity than needed for the expected duration of pain severe enough to require opioid pain relievers (3 or fewer days will usually be sufficient).

### Determining When to Initiate or Continue Opioids for Chronic Pain

- Non-opioid therapies are preferred for chronic pain (including nonpharmacologic therapy). If opioids are prescribed, they should be used in combination with non-opioid therapy such as cognitive behavioral therapy, exercise therapy, physical therapy and/or non-opioid pharmacologic therapy such as nonsteroidal anti-inflammatory drugs and acetaminophen.
- Establish treatment goals–discuss risks, realistic benefits, and therapy discontinuation.
- Reassess risks and benefits throughout treatment.

### Opioid Selection, Dosage, Duration, Follow-up & Discontinuation

- Prescribe immediate-release opioids instead of extended-release/long-acting opioids.
- Start low and go slow–prescribe opioids with the lowest possible effective dose; reassess individual benefits and risks when considering increasing dosage to ≥50 morphine milligram equivalents (MME)/day; avoid increasing dosage to ≥90 MME/day unless justified.
- Evaluate benefits and harms within 1 to 4 weeks of starting opioid therapy for chronic pain or of dose escalation. If benefits do not outweigh harms, discuss considerations for discontinuation of opioid therapy.

### Assessing Risk and Addressing Harms of Opioid Use

- Prior to beginning opioid therapy and during therapy, evaluate risk factors for opioid-related harms. Risk factors include pregnancy, kidney disease, being 65 years of age or older, mental health conditions, substance use disorder, prior nonfatal overdose, and others.
    - o Incorporate strategies to mitigate risk; offer naloxone when a patient is at increased risk of opioid overdose.
    - o Use a validated screening tool, such as the single question screener, the Drug Abuse Screening Test (DAST), or the Alcohol Use Disorders Identification Test (AUDIT), to find out about a patient's substance use.
- Use Prescription Drug Monitoring Programs (PDMPs) to determine concurrent opioid use
- Use urine drug test screening to test for concurrent illicit drug use.
- Avoid concurrent prescribing of other opioids and benzodiazepines if possible.
- Offer evidence-based treatment for opioid use disorders.

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### PDMPs CAN REDUCE PRESCRIPTION OPIOID MISUSE and DIVERSION

PDMPs—available in most states—can help detect patients who are misusing or diverting opioid pain relievers for illegal sale. PDMP use was among the policy changes credited with lowering prescription opioid overdose deaths in Florida by 27%.[14] PDMP use helped reduce the number of patients receiving opioid prescriptions from multiple prescribers by 75% in New York and 50% in Tennessee.[15]

# WHERE CAN I GET MORE INFORMATION?

- Health and Human Services Safe Opioid Health Professionals Resources
- NIDA Opioid & Pain Management CMEs/CEs
- NIDA Centers of Excellence (COE) for Physician Information
- NIDA Opioid Prescribing Resources


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# Naloxone for Opioid Overdose: Life-Saving Science

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### USER-FRIENDLY NALOXONE

In 2015, the FDA approved the first naloxone nasal spray—**NARCAN®**–developed as a result of NIDA-funded research.[1,2] Naloxone is also available as an autoinjector—**EVZIO®**—that provides verbal step-by-step instructions for use. Increasing access to naloxone is a priority for the U.S. Department of Health and Human Services, and research funded by NIDA is developing strategies to identify people at risk and ensure they have access to naloxone in the event of an overdose.

### IDENTIFYING AT-RISK PATIENTS

A survey given to chronic pain patients receiving prescription opioids found that nearly 1 in 5 had experienced an overdose and more than half engaged in high-risk behaviors, including combining opioids with alcohol. While only 3% of patients surveyed reported having a naloxone prescription or being trained to deliver naloxone, nearly 40% had witnessed an overdose.[3] Another study found 68% of participants recruited from syringe service programs, detoxification, or opioid treatment programs had witnessed an overdose but only 17% had a prescription for naloxone.[4]

### CO-PRESCRIBING NALOXONE TO AT-RISK PATIENTS

NIDA-funded researchers are evaluating interventions to improve opioid prescribing practices, including the co-prescription of naloxone. An early study found that giving naloxone to patients on opioid therapy for chronic pain was associated with fewer opioid-related emergency department visits, especially among patients receiving high doses of prescription opioids. This study will help to inform implementation efforts that can increase access to naloxone.[5]

## NALOXONE SAVES LIVES

**Naloxone can quickly restore normal breathing and save the life of a person who is overdosing on opioids.** In 2015, over 33,000 people died from an overdose on opioid drugs, including prescription pain relievers, heroin, and fentanyl.[6] Naloxone is a safe medication that is widely used by emergency medical personnel and other first responders to prevent opioid overdose deaths. Unfortunately, by the time a person having an overdose is reached, it is often too late.

**Friends, family, and other bystanders can save lives with naloxone.** Naloxone distribution programs give naloxone kits to opioid users, their friends and families, and others who may find themselves in a position to save the life of someone at risk of an opioid overdose.

- A naloxone distribution program in Massachusetts reduced opioid overdose deaths by an estimated 11 percent in the nineteen communities that implemented it without increasing opioid use.[7]
- From 1996 to 2014, at least 26,500 opioid overdoses in the U.S. were reversed by laypersons using naloxone.[8]

## HOW DOES NALOXONE WORK?

**Naloxone is an opioid receptor antagonist meaning it binds to opioid receptors and reverses or blocks the effects of other opioids.** Giving naloxone immediately reverses the effects of opioid drugs, restoring normal respiration. It can be administered by injection or through a nasal spray.

## IS NALOXONE SAFE?

**Yes. There is no evidence of significant adverse reactions to naloxone.**[9] Administering naloxone in cases of opioid overdose can cause withdrawal symptoms when the person is dependant on opioids; this is uncomfortable without being life threatening.[10,11] The risk that someone overdosing on opioids will have a serious adverse reaction to naloxone is far less than their risk of dying from overdose.[12,13] Naloxone only works if a person has opioids in their system; the medication has no effect if opioids are absent.

# GOOD SAMARITAN LAWS FOR NALOXONE

Thirty-six states and the District of Columbia provide legal immunity for friends, family, and other bystanders, or "Good Samaritans," who seek medical aid for someone experiencing an opioid overdose.[14, 15]

# AFTER NALOXONE IS GIVEN

## BYSTANDERS: CALL 911 IMMEDIATELY

**It is important to call emergency responders right away.** Naloxone is only active in the body for 30 to 90 minutes and its effects could wear off before those of the opioids, causing the user to stop breathing again.

## CLINICANS: SCREEN FOR OPIOID USE DISORDER

**An overdose reversal is a critical opportunity to identify people with opioid use disorder and engage them in treatment.**

- Patients should be assessed for opioid use disorder using a validated tool, such as NIDA's Recognizing Opioid Abuse table.
- Those with a positive assessment should be engaged in treatment, including FDA-approved medications, when appropriate.
- Treatment plans, including opioid pain reliever dose, should be reassessed for patients who are prescribed opioids for pain. See the CDC Guideline for Prescribing Opioids for Chronic Pain.

# WHERE CAN I GET NALOXONE?

**Naloxone can be purchased in many pharmacies, in many states, without bringing in a prescription.** The majority of states allow prescribing and dispensing of naloxone to family members and friends in addition to people receiving prescription opioids for pain or with opioid use disorder.[14] Law enforcement, emergency medical services, and community-based naloxone distribution programs can apply to be a Qualified Purchaser or work with their state or local health department to order naloxone. To find naloxone in your area, go to the Naloxone Finder.

# WHERE CAN I GET MORE INFORMATION?

If you or someone you care about has an opioid use disorder:

- Ask your health care provider or pharmacist about naloxone
- View NIDA's naloxone web page


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## REACHING COMMUNITIES IN NEED

In partnership with the Appalachian Regional Commission, NIDA is funding research that addresses the dramatic increase of opioid misuse and its consequences in Appalachia. This research will identify community-specific factors that contribute to the high rates of opioid misuse, overdose deaths, and the related spread of infectious disease and will identify promising evidence-based prevention and treatment interventions to address these factors and improve public health outcomes. Read more in the NIDA press release "NIDA and ARC announce funding opportunity for research projects to address opioid injection use and its consequences in the Appalachian Region."

## BARRIERS AND FACILITATORS TO PRESCRIBING NALOXONE

NIDA-funded studies are evaluating key barriers and facilitators to prescribing naloxone. Current projects include assessing the use of naloxone by law enforcement and measuring its impact on referrals to treatment and on the rates of 911 use by witnesses of opioid overdose; the implementation of pharmacy-based naloxone access and its association with opioid-overdose mortality rates; and the implementation of naloxone distribution programs and overdose education among criminal justice populations.


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# Effective Treatments for Opioid Addiction

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### IMPROVING MEDICATIONS

Extended-release medications, such as **Probuphine®** – an implantable formulation of buprenorphine approved by the U.S. Food and Drug Administration in May 2016 – eliminate the need for daily dosing and improve treatment retention. Read more in the NIDA press release Probuphine: A Game-Changer in Fighting Opioid Dependence.

### REACHING PATIENTS IN NEED

The ***emergency department*** (ED) provides a prime opportunity to screen patients for opioid use disorder and initiate MAT. Patients who initiate MAT in the ED are more than twice as likely to remain engaged in treatment compared to patients referred for treatment. Read more in the JAMA article Emergency Department–Initiated Buprenorphine/Naloxone Treatment for Opioid Dependence.

A recent study found treatment with extended-release naltrexone reduced relapse rates among ***criminal justice involved*** adults with a history of opioid dependence. Read more in the New England Journal of Medicine article Extended-Release Naltrexone to Prevent Opioid Relapse in Criminal Justice Offenders.

## OPIOID USE DISORDER AFFECTS MILLIONS

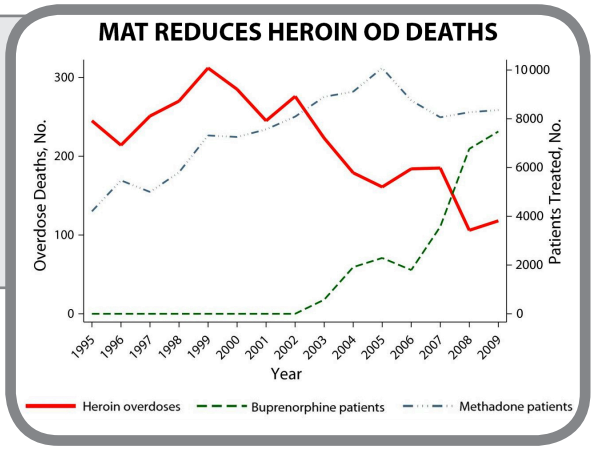
- Over 2.5 million Americans suffer from opioid use disorder which contributed to over 28,000 overdose deaths in 2014.[1,2]
- Use of opioids, including heroin and prescription pain relievers, can lead to neonatal abstinence syndrome as well as the spread of infectious diseases like HIV and Hepatitis.

## EFFECTIVE MEDICATIONS ARE AVAILABLE

**Medications, including buprenorphine (Suboxone®, Subutex®), methadone, and extended release naltrexone (Vivitrol®), are effective for the treatment of opioid use disorders.**

- Buprenorphine and methadone are "essential medicines" according to the World Health Organization.[3]
- Medications should be combined with behavioral counseling for a "whole patient" approach, known as Medication Assisted Treatment (MAT).

**MAT *DECREASES* opioid use, opioid-related overdose deaths, criminal activity, and infectious disease transmission.**[4,5,6] After buprenorphine became available in Baltimore, heroin overdose deaths decreased by 37 percent.[6]




**MAT *INCREASES* social functioning and retention in treatment.**[4,5] Patients treated with medication were more likely to remain in therapy compared to patients receiving treatment that did not include medication.[4]

**Treatment of opioid-dependent pregnant women with methadone or buprenorphine *IMPROVES OUTCOMES* for their babies**; MAT reduces symptoms of neonatal abstinence syndrome and length of hospital stay.[7]

# MEDICATIONS ARE NOT WIDELY USED

Less than 1/2 of privately-funded substance use disorder treatment programs offer MAT and only 1/3 of patients with opioid dependence at these programs actually receive it.[8]

- The proportion of opioid treatment admissions with treatment plans that included receiving medications fell from 35 percent in 2002 to 28 percent in 2012.[9]
- Nearly all U.S. states do not have sufficient treatment capacity to provide MAT to all patients with an opioid use disorder.[10]

# ADDRESSING MYTHS ABOUT MEDICATIONS

**Methadone and buprenorphine DO NOT substitute one addiction for another.** When someone is treated for an opioid addiction, the dosage of medication used does not get them high–it helps reduce opioid cravings and withdrawal. These medications restore balance to the brain circuits affected by addiction, allowing the patient's brain to heal while working toward recovery.

**Diversion of buprenorphine is uncommon; when it does occur it is primarily used for managing withdrawal.**[11,12] Diversion of prescription pain relievers, including oxycodone and hydrocodone, is far more common; in 2014, buprenorphine made up less than 1 percent of all reported drugs diverted in the U.S.[13]

# ADDITIONAL INFORMATION

**If you or someone you care about has an opioid use disorder, ask your doctor about available MAT options and about naloxone, an opioid antagonist that can reverse an opioid overdose.**

- Many states allow you to get naloxone from a pharmacist without bringing in a prescription from a physician; go to NIDA's Naloxone webpage to learn more.
- To learn more about MAT, see NIDA's Treatment Approaches for Drug Addiction DrugFacts
- To find a treatment provider, go to the Substance Abuse and Mental Health Services Administration's Opioid Treatment Program Directory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## NEW TREATMENTS

***Vaccines*** currently under development target opioids in the bloodstream and prevent them from reaching the brain and exerting euphoric effects.

Researchers are exploring the potential of ***Transcranial Direct Current Stimulation***, a novel, non-invasive brain stimulation technique, for treating opioid use disorder.

## IMPROVING TREATMENT DELIVERY

Researchers are exploring how the health care system can reach more people in need of treatment and helping providers understand which treatments will be most effective for which patients.

## REACHING JUSTICE-INVOLVED YOUTH

NIDA-funded research is aimed at identifying the most effective strategies for improving the delivery of evidence-based prevention and treatment services for youth through our ***Juvenile Justice Translational Research on Interventions for Adolescents in the Legal System (JJ-TRIALS)*** initiative. Read more on the NIDA Justice System Research Initiatives webpage.


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